

SECURITY IMPROVEMENTS AT LAWRENCE LIVERMORE NATIONAL LABORATORY

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Subcommittee on Oversight and Investigations
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OPENING REMARKS

Mr. Chairman and members of the committee, I am the Director of the Lawrence Livermore National Laboratory (LLNL). Our Laboratory was founded in 1952 as a nuclear weapons laboratory, and national security continues to be our central mission. Livermore is a principal participant in the Department of Energy's Stockpile Stewardship Program, heavily involved in programs to prevent the proliferation of weapons of mass destruction, and engaged in energy, environmental, and bioscience R&D as well as industrial applications of our core technologies.

Our National Security Mission and safeguards and security are inextricably linked, and we take both of them very seriously. In my testimony to this committee on July 20, 1999, I stated our commitment and described our efforts to provide increased confidence in the security of the Laboratory. I would like to report to you today the substantial progress that has been made in addressing the issues resulting from the May 1999 inspection by the DOE Office of Security Evaluations (OSE).

In the area of protection of Special Nuclear Materials (SNM), we are well along in executing an action plan to analyze, document, performance test, and enhance the Laboratory's comprehensive protection strategy. There have been several progress reviews by DOE Defense Programs (DOE/DP) and the Oakland Operations

Office (DOE/OAK). Hundreds of simulations have been performed, and a force-on-force performance test against an outside adversary team has validated the protection strategy. In parallel with this effort, there have been numerous physical and procedural upgrades and interim staffing increases. A new class of Special Response trained officers will graduate in December and enhance our staffing.

In the area of Materials Control and Accountability (MC&A), we have demonstrated the ability to consistently meet SNM measurement and inventory requirements and resolve inventory differences in a timely manner. Specific concerns raised by the OSE, ranging from statistical sampling procedures to verification of tamper indicating devices, have been addressed. This past week LLNL took delivery of a new certified calibration standard from DOE's New Brunswick Laboratory that will allow us to begin making certain specific accountability measurements.

We have also made improvements in the area of physical security and protection of classified matter. Performance issues identified by OSE in several vault-type rooms (VTRs) have been corrected, and two newly-hired alarm testers are conducting a detailed inspection of all vaults and VTRs at the Laboratory. Alarming and other physical upgrades of non-compliant classified parts storage areas are being aggressively pursued and will be completed by the end of the year. Over 100 non-GSA-approved repositories have been replaced, and we are in the process of replacing or relocating the remainder to VTRs. Physical barriers have been installed in many Q-clearance-only areas to restrict accidental access by L-cleared personnel, and a comprehensive cost and engineering study for completing the remainder is nearing completion.

The Laboratory has taken many steps to improve cyber security. Computer access by any foreign national must be approved through a rigorous review process. For cases where dial-in access is allowed for foreign nationals, the access is routed

through a single terminal server running state-of-the-art network intrusion detection software. In addition, unclassified systems are being scanned for vulnerabilities, and outgoing e-mail is being scanned for classified content. No issues have arisen. Steps have also been taken to limit the physical possibility of accidental transfer of information from a classified system to an unclassified system. We have installed a firewall between the open and restricted partitions of the unclassified network and are beginning transition of servers to the appropriate partition. And finally, we are actively participating in the DOE/DP Integrated Security Management (ISecM) initiative to further improve computer security.

In summary, much progress has been made in addressing the issues identified by the DOE/OSE security evaluation, and we are well on our way to reaching the goals we have set. I am committed to achieving an excellent Safeguards and Security Program at the Laboratory.

PROGRESS ON OSE FINDINGS

Protection Program Management

During the inspection in April, DOE/OSE (now DOE Office of Independent Oversight & Performance Assurance, DOE/OA) cited a concern that LLNL had not demonstrated assurance of the SNM Protection Strategy. Immediately, LLNL responded with a "Path Forward" action plan to analyze, document, performance test, and enhance the Laboratory's comprehensive protection strategy. With the support and concurrence of DOE/OAK, DOE/DP and DOE/OA, LLNL has performed over 300 tabletop and computer modeling simulations of possible adversary scenarios. The results provided LLNL with the credible scenarios that were performance tested during the first two weeks of September. During the week of September 12, DOE/OAK validated and DOE/DP verified the LLNL protection strategy through force-on-force testing conducted with an outside adversary team.

The validation and verification testing was observed by representatives of DOE/OA and the Office of Security and Emergency Operations (DOE/SO). General Habiger was present for part of the validation and verification exercise.

LLNL will implement the new protective force posture in December 1999, when a new group of Special Response Officers graduate from their SPO III Academy training. In the interim, increased protective force personnel are staffing the facility around the clock. Significant physical and procedural upgrades developed during the Path Forward analysis and performance testing have been implemented, with other upgrades on target for completion in February 2000.

Material Control and Accountability

LLNL has made great strides in achieving its commitment to the DOE Assistant Secretary for Defense Programs to rectify all MC&A issues, including those cited in the Annual Report to the President on Safeguards & Security and those of the DOE/OSE inspection report. Of the seven issues, all but one has been closed and validated by DOE/OAK. In particular, LLNL's MC&A team has demonstrated the ability to meet DOE's requirements for SNM measurements and inventory monitoring. The team has implemented procedures that are able to quantify and resolve inventory differences within a prescribed time frame and that process has been validated. Other validated procedures include means for assuring that personnel removed from the Personnel Assurance Program (PAP) and the Personnel Security Assurance Program (PSAP) are not permitted access to SNM, providing inventory confirmation of in-process material, and verifying the integrity of tamper indicating devices. In addition we have developed an improved sampling plan, based on item attractiveness, to be used to confirm inventory.

The Laboratory has now received shipment of certified measurement standards from New Brunswick Laboratory for use in inventory and measurement

accountability. These standards will enable LLNL to begin certain accountability measurements by the close of 1999.

Physical Security

The physical security program at LLNL was rated satisfactory; however, DOE/OSE identified five areas of weakness. Two of the concerns were addressed through modeling and performance tests as part of the Path Forward activity for Protection Program Management. LLNL's final protection strategy, which was validated by DOE/OAK, mitigated those concerns. One of the remaining concerns was closed through updated operational directives and was validated by DOE/OAK.

One of the remaining issues relates to the protection of classified matter and the adequacy of sensor coverage and proper testing. LLNL has taken aggressive action to address this concern. Two additional alarm testers have been hired and all alarm testers have now completed formal physical security training through the DOE Non-Proliferation and National Security Institute. The VTRs that were questioned in the OSE report have all been brought into compliance and there is an aggressive schedule to inspect and test all other VTRs and vaults at LLNL by the end of the calendar year.

The other remaining issue deals with the barrier delays for SNM laboratory doors. The validated protection strategy uses the delay value of the existing doors and basically mitigates the need for doors with longer delay times. The existing doors are not in compliance with the current DOE order. LLNL is developing a project plan, including a cost/benefit analysis, for the replacement of the doors to meet the DOE standard.

Classified Matter Protection and Control

In the area of the protection of classified matter, LLNL took immediate action to mitigate the OSE's concerns regarding the non-standard storage of classified parts.

We established a two-hour roving protective force patrol for the identified storage areas and now are fully compliant with pertinent DOE Orders. In addition, LLNL has completed a comprehensive self-assessment to assure that all facilities housing non-standard storage of classified parts, including those identified during the OSE inspection, are appropriately protected.

LLNL has initiated an aggressive upgrade program to bring all identified areas of non-standard storage to either the VTR standard or to relocate the items to vaults or VTRs by December 15, 1999. That program is well under way with alarm and physical upgrades currently being installed and items being consolidated or destroyed.

LLNL has identified all the locations of non-GSA-approved repositories and a comprehensive plan to replace all non-GSA repositories not stored in VTRs has been initiated. The plan also includes bringing into operation a new identification method that will permit the location of all repositories to be tracked in the LLNL property management database and verified by protective force patrol checks. Over 100 new repositories have been replaced to date, with additional containers on order. It is the goal of LLNL to either replace, relocate to VTRs, or provide off-hour checks of all non-GSA repositories by December 31, 1999.

A DOE/OSE concern was raised about the procedures and barriers used in Limited areas where personnel with both L and Q clearances have access. A survey of such areas is complete and a cost/benefit analysis is due on October 31, 1999. Options include the use of barriers and access control or requests for additional Q clearances. Many programs at LLNL have already installed, or are in the process of installing, physical barriers and access control to segregate L-cleared employees from Q-only areas. LLNL does not have any L-cleared foreign national employees. We have, however, implemented a policy to require any potential L-cleared foreign

nationals from elsewhere in the DOE complex to be escorted in general limited areas.

LLNL has implemented other actions to address the OSE concerns in the area of protection of classified matter, including modification of the Laboratory's Operations Security plan to place added emphasis on the highly critical and sensitive topics.

Cyber Security

LLNL is actively participating in the ISecM initiative chartered by DOE/DP. ISecM aims to achieve a comprehensive, integrated solution to improving security in the DOE Nuclear Weapons Complex, particularly security against the "insider" threat. ISecM constitutes a major upgrade to security in the Nuclear Weapons Complex and will require several years with significant new funding to implement. When implemented, ISecM will integrate security more fully and more transparently into classified computing across the Complex. In the long term, ISecM will comprehensively address the concerns expressed by the OSE while broadly improving security in the Complex.

In the near term, LLNL has taken immediate actions to address OSE concerns. LLNL has installed a state-of-the-art system to monitor all remote dial-in access by foreign nationals. In addition, LLNL has strengthened its existing foreign national approval process. We now require indices checks and review and approval by the LLNL Chief Information Officer (CIO) and the LLNL Associate Director for National Security for cyber access by any sensitive-country foreign national.

We are also vigorously addressing OA concerns related to LLNL's implementation of the Nine Point Action Plan:

- LLNL is applying Tamper Indicating Devices (seals) to classified computers to increase the assurance that users do not modify their computer systems to add ways of transferring data.

- LLNL has instituted rigorous new procedures for the authorized transfer of unclassified files from classified systems.
- LLNL is scanning all its unclassified computer systems to determine whether or not those systems have vulnerabilities.
- LLNL has procured new software that has the potential to significantly increase the Laboratory's ability to automatically scan e-mail for classified information.
- LLNL has installed a firewall between the open and restricted portions of the unclassified network and is beginning transition of servers to the appropriate partition. The firewall will be fully operational by March 1, 2000.

In addition, LLNL's programs have re-evaluated the need-to-know boundaries pertaining to the information they handle and their personnel. Each LLNL program area is restructuring its computer systems appropriately to enforce more stringent need-to-know separations.

To guide computer security in the future, the Laboratory has created a Computer Security Policy Board headed by the LLNL CIO to promulgate policy regarding computer security for the site.

CLOSING REMARKS

The security evaluation conducted by OSE noted many improvements to LLNL's security system while identifying areas for further improvement. We are carrying out a comprehensive corrective action plan to address those areas, and much progress has been made. I have committed the resources and set priorities to ensure that this plan is executed. Many corrective action milestones have already been achieved, and we are on schedule with the remainder. Most milestones are expected to be achieved by the end of the year. DOE has evaluated and concurred in or

validated much of our work to date. OA has noted LLNL's strong commitment to action.

I appreciate the opportunity to provide an update to the Committee on the status of security improvements at LLNL. I am confident that our Special Nuclear Material and sensitive and classified information are secure.

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